TABLE 6-continued

Influence of Wash Treatment Upon the Texture of Fresh Mushrooms.

Treatment	Resistance (Kg)
3. 1000 ppm Sodium Metabisulfite, 90 s	0.567 (A)
4. pH 11.0, 30 s/Neutralization*, 60 s	0.556 (A)
5. 1000 ppm Hydrogen Peroxide + 1000 ppm EDTA, 90 s	0.546 (A)

*Neutralization wash = 0.6% erythorbic acid + 2.4% sodium erythorbate + 1000 ppm EDTA + 1000 ppm calcium chloride.
Values are means of three replicates. Means followed by the same letter are not different at $p < 0.05$.

TABLE 7

Quality of Canned Mushrooms: High-pH treatment vs. Sulfite and R.O. Water Treatments.

Treatment	Whiteness (L-value)
High-pH	64.01 (A)
Sulfite	61.23 (B)
R.O. Water	59.13 (C)

Values are the mean of four replications. Means followed by the same letter are not significantly different at $p < 0.05$.

TABLE 8

Canning Yield for Washed Mushrooms: High-pH Treatment vs. Sulfite and R.O. Water Treatments

Treatment	Canning Yield (%)*
Sulfite	65.70 (A)
High-pH	65.53 (A)
R.O. Water	64.85 (B)

*Canning yield was computed on a fresh-weight basis. Values are means of four replicates. Means followed by the same letter are not significantly different at $p < 0.05$.

TABLE 9

Coliform Counts on Mushrooms Washed Before Freezing: High-pH Treatment vs. Sulfite and R.O. Water Treatments.

	Coliform Count (CFU/g)			
Treatment	2 weeks	4 weeks	6 weeks	8 weeks
Sulfite	120	375	30	10
R.O. Water	<10	<10	10	10
High pH	<10	<10	<10	<10

Values are means of three replicate plates each of 10^{-1}, 10^{-2}, and 10^{-3} dilutions.

APPENDIX TABLE 1

Effect of a Trisodium Phosphate (TSP) Wash on the Storage Quality of Fresh Mushrooms.

	Whiteness (L-value)		
Treatment	Day 0	Day 3	Day 6
1. Unwashed Control	90.39	87.32	81.33
2. R.O. Water, 120 s	93.36	91.60	86.61
3. 1000 ppm Sodium Metabisulfite, 120 s	95.10	92.63	89.53
4. 10% Trisodium Phosphate, 120 s	60.42	58.84	58.91

APPENDIX TABLE 2

Influence of Reduced TSP Concentration and a Neutralization Wash on the Performance of a TSP Mushroom Preservative Treatment.

	Whiteness (L-value)		
Treatment	Day 0	Day 3	Day 6
1. R.O. Water, 120 s	87.89	85.89	78.92
2. 1000 ppm Sodium Metabisulfite, 120 s	93.16	90.75	82.75
3. 10% Trisodium Phosphate (TSP), 120 s	72.45	70.50	67.51
4. 10% TSP, 60 s; R.O. Water, 60 s	80.22	85.32	76.67
5. 10% TSP, 60 s; 4.50% E.A., 60 s	90.82	91.00	89.50
6. 10% TSP, 60 s; 2.25% NaE, 60 s	89.23	87.67	84.32
7. 10% TSP, 60 s; 2.25% E.A., 60 s	90.71	90.91	84.12
8. 5% TSP, 60 s; 2.25% E.A., 60 s	87.92	86.92	78.60
9. 2.5% TSP, 60 s; 2.25% E.A., 60 s	89.59	87.38	77.90
10. 2.5% TSP, 60 s; 1.00% E.A., 60 s	88.35	85.06	76.47

E.A. = erythorbic acid
NaE = sodium erythorbate

APPENDIX TABLE 3

Evaluation of TSP-vs. Sodium Bicarbonate-Based High-pH Preservative Treatments.

	Whiteness (L-value)		
Treatment	Day 0	Day 3	Day 6
1. R.O. Water, 120 s	86.63	82.28	78.08
2. 1000 ppm Sodium Metabisulfite, 120 s	94.52	91.23	83.78
3. 10% TSP, 60 s; 4.50% E.A., 60 s	87.97	85.64	81.75
4. 10% TSP, 60 s; 2.25% B.A., 60 s	87.45	83.93	79.36
5. 5% $NaHCO_3$, 60 s; 2.25% B.A., 60 s	88.62	85.87	83.05
6. 0.05M $NaHCO_3$, 60 s; 0.2% E.A., 60 s	92.66	92.90	89.10

We claim:

1. A method for preserving fresh and processed mushrooms, comprising the steps of:

contacting the mushrooms with an antimicrobial buffer solution having a pH of from about 9.5 to about 11.0; and

rinsing the mushrooms one or more times immediately after said contacting step with pH-neutralizing buffer solutions of erythorbic acid and sodium erythorbate, in ratios of about 1:4, having a sufficient pH to return the mushrooms to the mushroom physiological pH of about 6.5.

2. The method of claim 1 wherein said antimicrobial solution is 0.05–0.5M sodium bicarbonate buffer solution, and the pH-neutralizing buffer solutions are about 0.04–0.6% erythorbic acid and about 1.6–2.4% sodium erythorbate.

3. The method of claim 2 wherein said contacting step is carried out for about 30–60 seconds at about 10–35° C., and said rinsing step is carried out for about 60–120 seconds at about 10–25° C.

4. The method of claim 3 wherein said pH-neutralizing buffer solutions further include 1000 ppm calcium-disodium EDTA.

5. The method of claim 3 wherein said pH-neutralizing buffer solutions further include 1000 ppm calcium chloride.

6. The method of claim 3 wherein said pH-neutralizing buffer solutions further include 1000 ppm calcium-disodium EDTA and 1000 ppm calcium chloride.

7. The method of claims 2–6 wherein said antimicrobial solution is a 0.05M sodium bicarbonate buffer solution having a pH of about 10.5–11.0, and the pH-neutralizing buffer solutions include about 0.6% erythorbic acid and about 2.4% sodium erythorbate, and said contacting step is carried out for about 30 seconds at about 25° C., and said rinsing step is carried out for about 60 seconds at about 10° C.

8. The method of claim 1 wherein said antimicrobial solution is a 5–10% tribasic sodium phosphate solution.

* * * * *

add A1

add B2